RUINS OF ENGLAND.

In rambling over the verdant hills and valleys of our beautiful island, the lover of the picturesque dwells with feelings of pleasure and veneration on the mouldering and ivy-green remains of the castles and halls which were once the fastnesses of her feudal nobility. To the admirer of ancient buildings nothing is more consolatory than the moats, bastions, portcullises, and keeps, of old baronial halls; and in the quiet contemplative repose of a summer-day's march, the pedestrian finds a refreshing sedative in visions of fancy which people these structures with armed knights, warders, and love-lorn maidens.

Often in the radiance of last summer's sunshine have I contemplated the glories of Rochester Castle, Herstmonceaux, Allingham, Sandling, and various others in our home counties; but it has been to me a source of deep regret to observe how, within a very few years, the sordid love of pelf has dealt destruction and demolition amongst those fine memorials of our ancestors.

At Sandling I have lain under the shade of a venerable oak and indulged in reveries on the gorgeous processions of Wolsey, and then prying into the vista of previous ages, have seen, in dreamy fancy, the tournaments of Norman knights which had been there exhibited before the crowding villeins. Here no sentiment of regret was mingled with my fancies, for no Gothish hand has dared to meddle with the sainted wreck—it has been left to Time, and he has gently done his work: mantled in ivy its noble towers and minarets preserve their dignity—no ruthless hand hath ever displaced one stone; no, it stands on consecrated ground, all open to the view of those who love antiquity, but not converted to the servile uses of the barn or shed: the verdant turf within and without denote that it is dedicated to devotion. Here I often strayed, and here, "around the green ruin, each wish of my heart entwines itself fervently still."

Turn to Allingham Castle in Old Harry's time, the seat of the tasteful and tender Sir Thomas Wyatt, but long before, the castle of many a baron bold: what a contrast strikes the sense! this was indeed a princely hall. Now one portion (that next the Medway) is converted into a farm-house for the cultivation of 300 acres: the other was also a farm-house for some 100 more, but lately this latter has been *dismantled*, the roof torn off, the floors taken away for cattle sheds, the *windows demolished*, and the materials converted into peasant cottages!

In the refection hall, there yet remains the mantle-piece, where once the faggot blazed, and on the entablature, T. W. 1556, denotes the spot where old Sir Thomas warmed into verse: within the court are piggeries and fowl-yards, cow-sheds, stacks!!—and yet remaining in its chiselled groove, the old portcullis shuts in all the hoard, an orchard fills the moat, and sacrilegious hands have robbed the structure of its outward show.

This latter is the property of Lord Romney; the beautiful Sandling, standing in its native rude simplicity, belongs to Mr. Brockman.

How truly noble is the possession of a ruin such as this—it is Nature's temple, and aloud proclaims to all who view, *come here and worship*: but the other, closed against the prying antiquary, turned to thrifts, debased by grovelling votaries of gain, excludes the wayfarer, and robs our sires of all their chivalry, and us of our romance.

Throughout the land there are many ruins preserved in all their beauty, and many, very many possessors of those proud memorials treasure them, if not for ancestral pride, at least for respect to opinion, or in deference to good taste.

The Archæological Association, which embodies so many lovers of the olden relics, will, it is to be hoped, make an effort to preserve from gothish spoliation what remains to us; and occasional observations in The Builder cannot fail to aid the admirers of our old national relics from further Vandalism. A permanent column for the *Nooks and Corners of Old England* would not be an unwelcome subject; and the credit due to the liberal owner of well-kept olden monuments, might prove a stimulant to respect the decaying castles of our ancestors, as well as to share the pleasures of many an instructive reflection with many a less fortunate though not less tasteful admirer.

Q.

AN ARCHITECTURAL COMPETITION ABROAD OPEN TO ALL.

The Amsterdam Society for the Improvement of Architecture offer a prize of 500 *florins de Hollande* and a certificate of merit, for the best design for a theatre capable of containing from 2,000 to 2,500 persons. Each design must be accompanied by an explanatory memoir, written in French, and not in the handwriting of the author. Foreigners are invited to compete. The name is to be sealed up, and the design distinguished by a motto, must be sent in by November 1, 1849. A letter addressed to *M. Warnsinck, Secrétaire, Société pour la Propagation de l'Architecture, Amsterdam*, would, doubtless, obtain all the necessary particulars for any who may desire to have them.

THE CURVE OF SUSPENSION BRIDGES.

Sir,—With reference to the curve of suspension bridges, called the catenary, a few remarks may not prove uninteresting.

The curve of the chain is arrived at by mathematical investigation, thus stated:—"A chain of variable thickness, but of the same material throughout, is suspended from two points: required to find the law of thickness, so that the tension at different parts of the chain may vary as the strength of the chain at these parts." The curve so determined is known as the catenary of equal strength; from this, likewise, a conclusion may be drawn that the tension at any point of the common catenary is measured by the weight of a portion of the chain, whose length is equal to the perpendicular distance of that point from the directrix, or horizontal line below the curve, so that it is obvious the tension of the chain is not uniform throughout its length, but increases from the middle to the points of suspension.

As an illustration of this, Hungerford Suspension-bridge may be referred to. In this bridge the pathway is not a horizontal plane, as it rises 4 feet at the centre; but for the present purpose we may suppose that it is level, and forms the directrix of the curve; therefore, on the supposition made, the tension of the chain at the point of support would equal the weight of a portion of the chain, whose length is equal to the vertical height of the pier above the roadway; and again, the tension at the middle would equal the weight of a portion of the chain, whose length is equal to the length of the suspension rod at that point. The deflection of the chain at the middle is 50 feet. Hence the difference between the tensions at the middle and the point of suspension is equal to the weight of a portion of the chain whose length is 50 feet. The average section of the chain is about 300 square inches, or $2\frac{1}{12}$th square feet; so that the difference between the tension is equal to $2\frac{1}{12} \times 50 = 104\frac{1}{6}$ cubic feet of metal of which the chain is formed. This, upon calculation, will be found to be rather more than ten tons.

The catenary, if supposed to be of uniform thickness throughout, is exposed to the great objection of subjecting equal strength to very unequal strains. If a bridge, constructed on the old catenarian principle, be sufficiently strong to resist all the strains to which it would ever be subjected, then it follows that there must be a redundance of strength, and consequently a waste of material in some of its parts; for if the chain be sufficiently strong to resist the strain at the point of suspension, then it must be much stronger than is necessary to resist the tension at the middle. It is obvious, therefore, that the catenary has this economical objection of wasting material in producing a strength which cannot be brought to a practical application, and the superfluity of material towards the middle of the chain is not merely useless but prejudicial.

Mr. Dredge's plan of constructing suspension-bridges is the adoption of the taper chain, for which he obtained a patent in 1836. The first bridge that was constructed on this principle was the Victoria-bridge at Bath, and since its erection others on the same principle have been put up in different parts of the kingdom. The inventor does not construct his bridge in strict accordance with the principle of diminishing the strength in the proportion in which the tension diminishes. His method is but an approximation to that of the catenary of equal strength and only in so far as it approximates thereto. Before, however, the catenary of equal strength can be carried into practical application, a considerable difficulty has to be overcome in the regulation of the taper; the sectional area of the chains cannot easily be changed in the same link—the change can only be effected while proceeding from one link to another, but the diminution in the number of bars in a link brings along with it a difficulty in connecting it with the preceding link. Mr. Dredge's plan is to give the chain sufficient strength at the points of support, by putting the requisite number of bars in the links adjacent to the piers, and to diminish the number by one at every successive link until the chain terminates in a single bar at the centre of the bridge. In this way the difficulty of the gradual taper is thus avoided at the same time it approximates to the just principle of construction.

In the old way of constructing suspension-bridges, the suspension rods are all perpendicular, but in this plan they are placed obliquely, consequently support a proportionate part of the weight by a cross strain: the obliquity of the bars also applies the force at a greater distance from the abutment, which is regarded as a fulcrum; it likewise causes a thrust which is not obtained by the action of vertical force.

The greatest defect of suspension-bridges lies in the susceptibility to vibration: this remark applies to all kinds, whatever be the proportion of the suspending chains. This defect may be counteracted in a degree by forming the railway of the bridge into a strong truss and making the roadway a strong diagonal framing.

G. J. Rhodes.

New Books.

Practical Essays on various Branches of the Fine Arts. To which is added, a Critical Inquiry into the Principles and Practice of the late Sir David Wilkie. By John Burnet, F.R.S. D. Bogue, Fleet-street, 1848.

The Essays in this volume are on six subjects:—historical painting in England; portrait painting, with the comparative merits of Vandyke, Reynolds, and Lawrence; the treatment of pictures of fancy subjects and familiar life; the distinctive characteristics of oil and water-colour painting; comparative merits of line engraving and mezzotinto; and on the present state of the fine arts of Great Britain. They are collected from the pages of the *Art-Journal*, for which they were originally written, and form a pleasant and useful volume.

In some brief remarks on the Art-Union of London, which display a want of knowledge and due appreciation of its real purpose quite singular on the part of so able a writer as Mr. Burnet is,—the author seems to assume that the alterations proposed some time since by the Board of Trade had been adopted, whereas, in truth, they were all withdrawn, their injurious tendency being made manifest to their lordships in the course of the discussion elicited by the proposal.

Composition and Punctuation Familiarly Explained. By Justin Brennan. Sixth Edition. London: E. Wilson, Royal Exchange. 1848.

This is an exceedingly useful little work, which, although intended by the author for those who are "not acquainted with grammar," may be very usefully studied by many who *are*.

The Literary and Scientific Register and Almanac for 1849. By J. W. G. Gutch, F.L.S. Bogue, Fleet-street.

We have had occasion before this to commend Mr. Gutch's Almanac, and may safely do so again. It contains a large amount of information.